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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,414	04/07/2005	Toyoaki Ishiwata	Q87310	5784

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EXAMINER
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LISTVOYB, GREGORY

ART UNIT	PAPER NUMBER
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1711

MAIL DATE	DELIVERY MODE
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09/17/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding:**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/530,414

Applicant(s)

ISHIWATA ET AL.

Examiner

Gregory Listvoyb

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

Claims 1-2, 4-7 and 14-15 rejected under 35 U.S.C. 102(b) as being anticipated by Uhara et al (WO02/16475), herein Uhara.

Regarding Claims 1, 2, 5 and 14-15 Uhara discloses a polyamide film, manufactured from polyamic acid comprising pyromellitic dianhydride, 10-60% mol of 1,4 phenylenediamine and 40-90% mol of 3,4'-oxydianiline (page 4, line 30, Example 1), which can be used in metal wiring circuit board, LOC and TAB tapes (page 1, line 15).

Regarding Claims 4, 6 and 7, since the structures of Uhara's and Applicant's polyimide are identical, Uhara's resin inherently possesses tensile strength of 150Mpa or greater, imide group concentration between 5.7 and 6.2 eq/kg and imide group fraction 95% or greater (Tables 1-3).

Claims 1 and 3 rejected under 35 U.S.C. 102(b) as being anticipated by Moriyama et al (JP2001-081213), herein Moriyama.

Regarding Claims 1 and 3 Moriyama discloses a polyamide film, manufactured from polyamic acid comprising pyromellitic dianhydride, 60-90% mol of 1,4 phenylene diamine and 10-40% mol of another diamine, such as dioxy triphenyl diamine (abstract

and line 0017) with orienting (stretching) film in delivering and orthogonal directions (see Abstract).

Since the structures of Moriyama's and Applicant's polyimide are identical, Uhara's resin inherently possesses tensile strength of 150Mpa or greater, imide group concentration between 5.7 and 6.2 eq/kg and imide group fraction 95% or greater.

Claims 8-13 rejected under 35 U.S.C. 102(b) as being anticipated by Sadanobu et al (WO01/81456, cited with equivalent US 6797801) herein Sadanobu.

Sadanobu discloses a film-forming process of a polyimide film characterized by comprising the following steps:

Step 1: A step in which (A) pyromellitic anhydride, (B) phenylene diamine and (C) an aromatic diamine, such as diaminodiphenyl ether (see Column 4, line 10) at dianhydride/diamine ratio between 0.95 and 1.05 (see column 7, line 65) to obtain a polyamic acid solution.

Note that Sadanobu teaches the content of pyromellitic anhydride is 80% and more and the amount of another anhydride is 0-20% (see claim 1). Therefore, use of 100% of pyromellitic anhydride is within the Sadanobu's disclosure.

Regarding inequality (2) of claim 8, Satanobu discloses 80% or more of phenylene diamine and 20% or less of another diamine (i.e. diaminodiphenyl ether), which meets the above limitation.

Step 2: A step of reacting the obtained polyamic acid solution with a dehydrating agent to form a gel film wherein at least a portion of the polyamic acid is converted to polyisoimide (see Claim 8, limitation (2)). Total percentage of imido group and isoimido group in this step is within the range of 20-100% (meeting the limitations of claim 9 and 11).

Regarding Claim 10, Satanobu discloses the polyamic acid solution prepared in Step 1 is cast onto a support to obtain a film, and the obtained film is dipped together with the support into an isoimidating solution comprising the same solvent as in Step 1 and acetic anhydride as dehydrating agents and an organic amine, to form a gel film wherein at least a portion of the polyamic acid is converted to polyisoimide (see Claim 11).

Step 3: A step of biaxially stretching the obtained gel film, wherein the gel film supplied for biaxial stretching has a swelling degree of 300-5000% (see Claim 9, meeting the limitation of Claim 12) and a stretching temperature is between - 20°C and 80°C (see Column 8, line 65);

Step 4: A step of heat treating the obtained biaxially stretched film at 300-550C  
(see Claim 8) (meeting the limitations of Claim 13).

### ***Double Patenting***

Claims 1-2, 4-5, 9 and 12 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 4, 5 and 18-19 of copending Application No. 10/543813. Although the conflicting claims are not identical, they are not patentably distinct from each other because a polyimide, disclosed in claim 1 of Application examined can be used as adhesive sheet and a laminate disclosed in claims 4, 5 and 18-19 of Application No. 10/543813. The above articles are made from a polyamide of the same structure as described in Application examined. Moreover, the primary application of the polyimide is a polymer film (see claims 2-8 of the examined Application).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Response to Arguments***

Applicant's arguments filed on 7/6/2007 have been fully considered but they are not persuasive.

Regarding Applicant's argument that Uhara's gel film supplied for stretching is different from the present gel film supplied for stretching. The Specification discloses that the stretching temperature is not particularly restricted (see page 27 of the Specification). Therefore, Uhara's film inherently possesses the properties, which meet the limitations of claim 1.

Regarding Applicant's argument that Moriyama's film is not stretched, Moriyama discloses orienting (stretching) film in delivering and orthogonal directions (see Abstract).

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

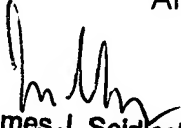
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory Listvoyb whose telephone number is (571) 272-6105. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory Listvoyb  
Examiner  
Art Unit 1711

GL  
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James J. Seidleck  
Supervisory Patent Examiner  
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